

PROCEEDINGS  
OF THE  
NEW ENGLAND ZOÖLOGICAL CLUB

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## HERPETOLOGICAL NOTES

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REGARDING *DIADOPHIS PUNCTATUS*

DURING the past winter in Florida I had the opportunity after an interval of some years to observe living Southern ring-neck snakes. I was struck with their rich coloring, far more vivid than that of our New England ring-necks. Returning to Cambridge, I concluded that two easily recognized forms were being confused. Not long after, in Washington, Dr. Stejneger told me that he had been similarly persuaded some years ago; and with characteristic generosity he sent me, quite unasked, his notes summarizing his observations on the large series preserved in the United States National Museum.

The old name of *Diadophis punctatus* is to be restricted to the Southern race and should stand:

*Diadophis punctatus punctatus* (Linné)

*Coluber punctatus* Linné, Syst. Nat., Ed. 12, Vol. I, 1766, p. 376. Type locality, Carolina.

The original description is pertinent and explicit: Cinereus; subtus luteus ordine triplici punctorum nigrorum, tribus scilicet in singulo ordine. Cauda etiam subtus flava. V. 136. Sc. 43.

This Southern race may be distinguished from the Northern by several characters. First, fewer ventral and subcaudal scales — the condition is best expressed by taking the sum of the two counts; second, a usually interrupted neck ring; third, a row of heavy half-moon-shaped blotches on the ventral scales, in addition to the two lines of large black lateral spots; and fourth, a very different coloration.

Thus the living colors of specimens from Florida were observed to be: —

Upper surfaces rich brown, each scale finely but very distinctly punctate; lower surfaces orange yellow (cadmium orange), fading to lighter yellow anteriorly and becoming richer and darker posteriorly, so that the region of the vent and under surface of the tail is rich deep orange, almost vermilion (orange chrome); collar light orange (cadmium orange). The colors in parentheses are from Stejneger's notes on a Hallandale, Florida, specimen, in the terms of Ridgway's Manual.

In eleven specimens from Florida, in the Museum of Comparative Zoölogy, the average sum of ventral and subcaudal counts is 184.4; in four from Georgia (Dr. Jones, probably from Savannah), 192.4. Specimens of the Southern race usually show less than 200 ventrals and subcaudals together. In forty-three examples in the Museum of Comparative Zoölogy and the U. S. National Museum, from Florida, the number of *ventral* scales varies from 129 to 145. In six from Mississippi, from 131 to 142. In six from lowland Georgia, from 136 to 152; while one from Roswell, in mountainous Cobb County in northwestern Georgia, approaches closely the Northern form. Three from South Carolina range from 141 to 155; ten from North Carolina range from 141 to 159.

All of the Florida specimens, in both the Museum of Comparative Zoölogy and the National Museum, have heavy or moderately large median spots on the belly. In the National Museum one specimen from Mississippi lacks spots. All of the Georgia examples from the coastal plain, in both museums, have the heavy spots; the example from Roswell (M. C. Z., no. 258) already mentioned, has only a few fine dots. Two examples from North Carolina in the National Museum have immaculate bellies, but have the low scale formula of the Southern form.

The distribution of *D. p. punctatus* may then be said to extend from the region of New Orleans along the Gulf lowlands to Florida, to include the entire State of Florida, and to extend northward to northern North Carolina from sea-level to 2500 feet altitude, and possibly higher in the mountains of South Carolina and Georgia.

The Northern race may stand as:

### **Diadophis punctatus edwardsii** (Merrem)

*Coluber edwardsii* Merrem, Tentamen Syst. Amph., 1820, p. 136 (based on Edwards' Gleanings Nat. Hist., III, 1764, p. 290, pl. 349, — as also is *Coluber torquatus* Shaw, Zoöl. Vol. III, 1802, p. 553, which is preoccupied by *Coluber torquatus* Lacépède = *Natrix natrix* (Linné)). Type locality, Pennsylvania; William Bartram, collector.

The Northern ring-neck snake differs from the Southern in having a wider, almost white, ring about the neck, scales more slaty gray and less punctate, belly paler, uniform cream-color from throat to tail, and in having a higher ventral and subcaudal scale count.

Thus eleven examples from Massachusetts, in the Museum of Comparative Zoölogy, have for the sums of ventrals and subcaudals an average of 212.2 (eleven from Florida, 184.4); also six from New York have an average of 217.8. The range of ventrals in fifteen New England specimens is 153 to 164; in nine from New York, 150 to 165; specimens from scattered localities in Virginia, Maryland, Pennsylvania, New Jersey, Michigan, Kentucky, Ohio, and Canada, fall within these limits. In all of the many Northern examples I have seen, the collar has been entire and the belly has been immaculate, except for two specimens which have scattered median dots. These were M. C. Z., no. 5610, from Springfield, Mass., and M. C. Z., no. 2471, from Fallsburg, Sullivan Co., New York, while Dr. Stejneger's notes show a few spots occurring on the following specimens: U. S. N. M., no. 13,296, A and C, from Montgomery Co., Maryland; U. S. N. M., no. 25,269, from Woodside, Maryland; U. S. N. M., no. 1969, from Tyree Springs, Tennessee; U. S. N. M., no. 22,813, from Dublin, New Hampshire.<sup>1</sup>

The race is distributed from Tennessee, Kentucky and Virginia, northward to the Upper Peninsula of Michigan, southern Canada and the Maritime Provinces. In the mountains it probably extends southward to northwestern Georgia. Mr. Dunn (Bull. Amer. Mus. Nat. Hist., 37, 1917, pp. 630–631) records that nine out of fifteen examples taken in the high

<sup>1</sup> Since this was written two examples from New Jersey have been kindly loaned me for examination by the American Museum of Natural History, both of which have a distinct median series of dark dots on the belly. These were from Newfoundland, Suffolk County; their counts total 215 and 217,—typically Northern.

I am indebted to Mr. K. P. Schmidt, of the Museum in New York, and to Dr. A. G. Ruthven, of Ann Arbor, for the recent loan of helpful material.

mountains of North Carolina had entirely unspotted bellies, and for the others he does not mention the large conspicuous blotches seen on those from the Southern lowlands.

The Northern race far exceeds the Southern in size. The largest example in the Museum of Comparative Zoölogy is from Tupper Lake, New York, T. Barbour collector, and measures 425 mm. in total length; while from the South few exceed the largest in the M. C. Z. series from Fort Lauderdale, Brevard Co., Florida, T. Barbour and Harrison W. Smith collectors, which measures 270 mm. in total length.

It is just possible that these snakes may be still further divided, but the material at hand is not convincing on this point. Ring-neck snakes from peninsular Florida are very brilliantly colored when alive; and if compared with living material from the Carolinas and Georgia it is by no means impossible that they would prove to show characters by which they could invariably be distinguished.

#### ON LEOCEPHALUS RAVICEPS

For some years past I have spent much of my time in Cuba, and finally I collected what I knew of the Cuban reptiles and amphibians, together with information sent me from time to time by my friend Ramsden, and feeling that it was unlikely that I might explore further in Cuba for a long time, I published 'The Herpetology of Cuba' (Barbour and Ramsden, Mem. M. C. Z., 47, 1919, p. 71-213, pl. 1-15). On p. 173, discussing *raviceps*, the status of the species was summed up by saying "All things considered, it is by no means impossible that the types of *raviceps* came from some one of the Bahamas and were credited to the Wright collection from Cuba by mistake." All this, because neither Ramsden nor I had succeeded in finding the species and I knew it only from the soft and discolored types.

This spring, in looking over some small collections that had accumulated in the Museum of Comparative Zoölogy, to my

surprise and chagrin I found a large jar of *Leiocephali*, which had been laid away, and unfortunately had been overlooked. Among some examples of *macropus* and *carinatus*, species which I had already noted from Baracoa, whence this lot came, were no less than six examples of *raviceps*. The whole suite was taken by Señor Victor Rodriguez y Verrier; and if I remember correctly they were sent to me by him, reaching here just as I was leaving for Cuba two years ago. By a stupid oversight I had lost the opportunity to settle the status of this rare member of the Cuban fauna by a more intelligent notice of its existence in the Herpetology of Cuba, instead of now in this unfortunately detached form.

#### NOTES ON CELESTUS

Not long since, while on a short visit to Washington, I had the privilege of examining the type of *Celestus* (*Diploglossus*) *weinlandii* (U. S. N. M., no. 12,145), which was taken at Gonaives Island, Haiti, many years ago, by Younglove. Recently acquired specimens were compared with this type, and two, which appeared beyond any doubt to be identical, were forwarded to me here in Cambridge. Not long afterward, on borrowing a specimen of *Celestus phoxinus* from the Philadelphia Academy, I found it to be the long-lost type of this name, which belonged to the Museum of Comparative Zoölogy, but was in Cope's possession at the time of his death, as he had failed to return it with other specimens of the Weinland collection from Haiti, which was loaned to him for study and was only in part recovered.

Thus it has been possible to confirm Garman's belief that Cope's *Panalopus costatus* was based upon a mutilated individual of the same species which he subsequently named *phoxinus*.

The type of *Celestus stenurus* is, in my opinion, simply a large adult of the same form. The species should then stand as

***Celestus costatus* (Cope).**

*Panalopus costatus* Cope, Proc. Acad. Nat. Sci. Phila., 1861, p. 494. Type, M. C. Z., no. 3606, Jeremie, Haiti, collected by Dr. D. F. Weinland.

*Diploglossus stenurus* Cope, Proc. Acad. Nat. Sci. Phila., 1862, p. 188. Type, M. C. Z., no. 3612, Jeremie, Haiti, collected by Dr. D. F. Weinland.

*Celestus phoxinus* Cope, Proc. Acad. Nat. Sci. Phila., 1868, p. 125. Type, M. C. Z., no. 12,457, formerly Phila. Acad., no. 9226, Jeremie, Haiti, collected by Dr. D. F. Weinland.

*Celestus weinlandii* Cope, Proc. Acad. Nat. Sci. Phila., 1868, p. 125. Type, U. S. Nat. Mus., no. 12,145, Gonaives or Gonaves Island, Haiti, T. Younglove collector.

These types are mostly of different sizes. Thus *weinlandii* represents, I believe, the very young; *phoxinus* and *costatus* were based upon half-grown individuals, almost identical in size, but one normal and the other artificially mutilated (Barbour, Mem. M. C. Z., 44, 1914, p. 306); while *stenurus* is a very large adult. Dr. Stejneger and I now both believe that the number of striae on the dorsal scales increases with age, and is of little diagnostic value except when comparing specimens of similar size. Garman and I have both said in print that we agreed with Boulenger that *stenurus* could not be separated from *striatus* (= *occiduus*) of Jamaica. It is probably most wise, however, to await still more material before concluding that any of the Jamaican species are really identical with the Haitian. Nevertheless, after seeing a Haitian series, which tends to show a great change between the coloration of young and adults, I am strongly inclined to suspect that *Celestus crusculus* (Garman) (= *bakeri* Boulenger) is the young of *Celestus occiduus* (Shaw). Of one series, labelled *crusculus*, all are small, including the type (M. C. Z., no. 6051), and in color distribution and pattern they are very similar to the types of *phoxinus* and *costatus*, which are of about the same size; while our specimens labelled *occiduus*

are all large, with coloration more like the larger specimens from Haiti, which I have seen in the Mann and Abbott collections. Thus there may be but two species in Jamaica, *occiduus* and *impressus*, wholly distinct, and the latter with young and adults (many of both in M. C. Z.) similar in type of coloration.

Additional specimens of *occiduus* from Jamaica are very desirable, to determine whether this should or should not be united with *costatus*. My present belief is that they will prove distinct in coloration details, if not in squamation.

This leaves the West Indian species distributed as follows:

<i>Celestus de la Sagra</i> (Cocteau).	Cuba.
<i>Celestus rugosus</i> Cope.	San Domingo.
The type of this species is U. S. N. M., no. 10,260. Its status perhaps is doubtful.	
<i>Celestus costatus</i> (Cope).	Haiti.
Possibly the same as <i>occiduus</i> .	
<i>Celestus sepoides</i> (Gray).	Haiti and San Domingo.
The genus <i>Sauresia</i> perhaps should be recognized.	
<i>Celestus badius</i> Cope.	Navassa Island.
Types, U. S. N. M., nos. 25,817 and 25,818, W. J. Rasin collector.	
Status doubtful (= <i>costatus</i> ?).	
<i>Celestus maculatus</i> (Garman).	Cayman Brae.
<i>Celestus occiduus</i> (Shaw).	Jamaica.
<i>Celestus impressus</i> Cope.	Jamaica.
<i>Celestus pleii</i> (Dumeril and Bibron).	Porto Rico.

My hearty thanks are due Dr. Stejneger for permission to examine specimens in his care, and to Mr. H. W. Fowler of the Philadelphia Academy.